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U.S. Patent Application No. 09/559,982  
Attorney's Docket No. 99-963

### REMARKS

This amendment is responsive to the Office Action mailed on July 2, 2004. Claims 1-33 were presented for examination. Claims 1-26 were rejected. Claims 27-33 were allowed.

Claims 10-11, 15-16, 21-22, and 25-26 are objected to as being dependent from rejected independent base claims, but the Examiner indicates they would be allowable if rewritten in independent form including all limitations of their respective base claim and any intervening claims. Claims 34-37 are new. No new matter is added. Claims 10-11, 15-16, 21-22, and 25-26 are canceled, their substance being incorporated into their respective independent claims.

Thus, claims 1-9, 12-14, 17-20, 23-24, and 27-37 remain pending. Reconsideration and allowance are respectfully requested.

Claims 1-9, 12-14, 17-20, 23, 24, 32, 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,109,413 to Comerford et al. (hereinafter "Comerford") in view of the Examiner taking official notice. Applicants respectfully traverse this rejection because Applicants have amended their claims in a manner to overcome the rejection.

#### Independent Claims 7, 12, 19, and 23

To begin with, as noted above, the Office Action indicated that claims 10-11, 15-16, 21-22, and 25-26 would be allowable if rewritten in independent form including all limitations of their respective base claims and any intervening claims. Rather than rewriting these claims, Applicants have incorporated their limitations including all limitations in any

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intervening claims into their respective base claims, thereby arriving at the same substantive claim results for which the Examiner has indicated their allowability, and canceled claims 10-11, 15-16, 21-22, and 25-26. In other words, independent claim 7 now includes the limitations of claims 10 and 11, independent claim 12 now includes the limitations of claims 15 and 16, independent claim 19 now includes the limitations of claims 21 and 22, and independent claim 23 now includes the limitations of claims 25 and 26. Accordingly, independent claims 7, 12, 19, and 23 are allowable. Furthermore, their respective, non-canceled dependent claims, namely: 9, 14, 20 and 24 are likewise allowable, at least by reason of dependency.

Independent claims 1, 17, 18, 32 and 33

Independent claims 1, 17, 18, 32 and 33 have each been amended to modify "e nryption keys". For example, claim 1 recites, in part: "A method of archiving quantum-cryptographic encryption keys....comprising: collecting one or more quantum-cryptographic encryption keys...." (emphasis added). This same amendment is made in each of the other independent claims. These amended independent claims do not read on Comerford. Throughout Comerford, reference is made to "software decryption key", and one reference was made to "c ryptographic key" (column 2, line 54). However, there is no reference to "quantum-cryptographic key" in Comerford because Comerford has nothing to do with quantum mechanics or quantum physics. Comerford is predominantly, if not exclusively, a computer software patent, with no relevant connection to quantum physics issues. Accordingly, these amended independent claims are not disclosed or suggested by

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Comerford and the claims are allowable.

Furthermore, the official notice portion of the rejection is deficient. Applicants traverse the Examiner's taking of Official Notice. Applicants call the Examiner's attention to the provisions of M.P.E.P. § 2144.03, the procedures set forth in the Memorandum by Stephen G. Kunin, Deputy Commissioner for Patent Examination Policy dated February 21, 2002, and the precedents provided in *Dickinson v. Zurko*, 527 U.S. 150, 50 U.S.P.Q.2d 1930 (1999) and *In re Ahlert*, 424 F.2d, 1088, 1091, 165 U.S.P.Q. 418, 420 (CCPA 1970). An Official Notice rejection is improper unless the facts asserted are well-known or common knowledge in the art, and capable of instant and unquestionable demonstration as being well-known. Further, any facts asserted as well-known should serve only to "fill in the gaps" in an insubstantial manner. It is never appropriate to rely solely on "common knowledge" without evidentiary support in the record as the principal evidence upon which a rejection is based. Applicants submit that the elements recited in claims 1-9, 12-14, 17-20, 23, 24, 32, 33 are not unquestionably well-known, and the Examiner has failed to demonstrate the contrary. Accordingly, Applicants traverse the Official Notice and respectfully request that the Examiner either cite a competent prior art reference in substantiation of these conclusions, or else withdraw the rejection.

Should the Examiner fail to produce competent documentary evidence to support the taking of Official Notice, Applicants request that the Examiner provide the required "specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge." M.P.E.P. § 2144.03 (internal citations

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omitted). Merely mentioning that it is well known in the art to transmit and store encryption keys in this manner does not fulfill the requirement for "specific factual findings".

Applicants believe that the rejection based on official notice is now moot anyway, in view of the amendments made herein to the claims which clearly make them allowable over Comerford.

Claims 2-6, dependent from claim 1 are also allowable, at least by reason of their dependence, directly or indirectly, from allowable claim 1.

Support for the amendment to claims 1, 17, 18, 32 and 33 can be found in the application as filed. For example, Applicants' "encryption keys" are clearly related to quantum physics phenomena as they are described as being "derived from random bit sequences that are encoded in the phase/polarization states of single photons transmitted from one node to the next", in keeping with quantum physics principles (*see*: specification, page 5, line 22 through page 6, line 1). Furthermore, the term: "quantum-cryptographic key" in the amended claims finds support at least at page 14, lines 8 and 11; page 16, line 6; page 18, line 3; and Fig. 10.

New claims 34-37 each contain the same limitation: "quantum-cryptographic key", and are derived from original claims 7, 12, 19 and 23 respectively. Thus, these claims are not disclosed or suggested by the cited reference for the same reasons given above and are therefore allowable as well.

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**CONCLUSION**

Reconsideration and allowance of all pending claims are respectfully requested in view of the above amendments and arguments. To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 07-2347 and please credit any excess fees to such deposit account.

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